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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,903	09/14/2006	Hiroyuki Fukusako	10873.1953USWO	1844
53148 7590 04/07/2008 HAMRE, SCHUMANN, MUELLER & LARSON P.C. P.O. BOX 2902-0902 MINNEAPOLIS, MN 55402			EXAMINER WILLIAMS, ALEXANDER O	
			ART UNIT 2826	PAPER NUMBER
			MAIL DATE 04/07/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,903	Applicant(s) FUKUSAKO ET AL.	
	Examiner Alexander O. Williams	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 2-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 7 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/14/06</u> . | 6) <input type="checkbox"/> Other: _____ |

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Serial Number: 10/598903 Attorney's Docket #: 10873.1953USWO

Filing Date: 9/14/2006; claimed foreign priority to 3/16/2004

Applicant: Fukusako et al.

Examiner: Alexander Williams

This application is a 371 of PCT/JP05/04349, filed 3/11/2005.

Applicant's election of Species IV, figure 7 (claims 1, 7 and 8), filed 2/21/2008, has been acknowledged.

This application contains claims 2 to 6 drawn to an invention non-elected without traverse.

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Hirohashi Osamu (Japan Publication # 2001-326879).

1. Hirohashi Osamu (figures 1 and 2) show a driver module structure comprising: a flexible circuit board **11** provided with a wiring pattern **17**; a semiconductor device **12** mounted on the flexible circuit board; and an electrically conductive heat-

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radiating member **13** joined to the semiconductor device, wherein the wiring pattern comprises a ground wiring pattern **16**, the flexible circuit board has a cavity that exposes a portion of the ground wiring pattern, and the exposed portion of the ground wiring pattern and the heat-radiating member are connected to establish electrical continuity via a member that is fitted into the cavity.

Claims 7 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hirohashi Osamu (Japan Publication # 2001-326879) in view of Maki Toshimitsu (Japan Application # 11-284113).

Osamu show the features of the claimed invention as detailed above, but fail to explicitly show the cavity is a through hole penetrating the ground wiring pattern, a portion of the ground wiring pattern on an opposite side from the heat-radiating member is exposed, and the member fitted into the cavity is a fastener for fastening the flexible circuit board and the heat-radiating member.

Toshimitsu is cited for showing a heat radiation mechanism for a semiconductor integrated device. Specifically, Toshimitsu (figures 1 and 2) discloses the cavity is a through hole **34** penetrating the ground wiring pattern, a portion of the ground wiring pattern **32** on an opposite side from the heat-radiating member **20,21** is exposed, and the member fitted into the cavity is a fastener for fastening the flexible circuit board **30** and the heat-radiating member for the purpose of providing a heat dissipation mechanism capable of efficiently the heat generated in a semiconductor integrated device even if a space can be ensured for mounting a heat sink directly on the semiconductor integrated circuit device.

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8. The driver module structure according to claim 7, the combination with Toshimitsu show wherein the exposed portion of the ground wiring pattern and the fastener are connected via an electrically conductive bonding material.

Therefore, it would have been obvious to one of ordinary skill in the art to use Toshimitsu's heat radiating member in the through hole to modify Osamu's heat radiating member for the purpose of providing a heat dissipation mechanism capable of efficiently the heat generated in a semiconductor integrated device even if a space can be ensured for mounting a heat sink directly on the semiconductor integrated circuit device.

The listed references are cited as of interest to this application, but not applied at this time.

Field of Search	Date
U.S. Class and subclass: 257/774,680,712,713,717,720,668 349/150	3/30/08
Other Documentation: foreign patents and literature in 257/774,680,712,713,717,720,668 349/150	3/30/08
Electronic data base(s): U.S. Patents EAST	3/30/08

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O. Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272 1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alexander O Williams/
Primary Examiner, Art Unit 2826

AOW
4/7/2008